

# Yian Su, Ph.D. Candidate

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## Education






- Sep 2021 – present    📖 **Ph.D., Northwestern University**, Computer Science.  
Advisor: *Simone Campanoni*  
Research Interest: *Parallelizing & Optimizing Compilers, Runtime Techniques, Heterogeneous Systems.*
- Sep 2018 – Jun 2020    📖 **Master's, Northwestern University**, Computer Science.  
GPA: 4.0/4.0  
Advisor: *Simone Campanoni*  
Thesis: *A Better Memory Understanding for Program Dependence Graph through Static-Value Flow Analysis.*
- Sep 2017 – May 2018    📖 **University of Illinois at Chicago**, Electrical and Computer Engineering.  
*Senior-year Exchange Program.*  
GPA: 4.0/4.0  
Advisor: *Vladimir Goncharoff*  
Project: *Intelligent Shopping Cart.*
- Sep 2014 – Jun 2018    📖 **Bachelor's, Northeastern University**, Computer Science.  
GPA: 4.34/5.0  
Ranking: 1/195

## Publications




### Conference Proceedings

- 1 J. Giordani, Z. Xu, E. Colby, *et al.*, “Revisiting Computation for Research: Practices and Trends,” in *2024 SC24: International Conference for High Performance Computing, Networking, Storage and Analysis SC*, Los Alamitos, CA, USA: IEEE Computer Society, 2024, pp. 1097–1110. 🌐 DOI: 10.1109/SC41406.2024.00076.
- 2 **Y. Su**, M. Rainey, N. Wanninger, *et al.*, “Compiling loop-based nested parallelism for irregular workloads,” in *Proceedings of the 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, Volume 2*, ser. ASPLOS '24, La Jolla, CA, USA: Association for Computing Machinery, 2024, pp. 232–250, ISBN: 9798400703850. 🌐 DOI: 10.1145/3620665.3640405.
- 3 Z. Xu, Y. Chon, **Y. Su**, *et al.*, “Prompt: A fast and extensible memory profiling framework,” in *Object-oriented Programming, Systems, Languages, and Applications*, ser. OOPSLA '24, 2024.
- 4 A. Matni, E. A. Deiana, **Y. Su**, *et al.*, “Noelle offers empowering llvm extensions,” in *Proceedings of the 20th IEEE/ACM International Symposium on Code Generation and Optimization*, ser. CGO '22, Virtual Event, Republic of Korea: IEEE Press, 2022, pp. 179–192, ISBN: 9781665405843. 🌐 DOI: 10.1109/CGO53902.2022.9741276.
- 5 C. Wang, **Y. Su**, L. Zhou, S. Peng, Y. Yuan, and H. Huang, “A virtual network embedding algorithm based on hybrid particle swarm optimization,” in *Smart Computing and Communication*, Cham: Springer International Publishing, 2017, pp. 568–576, ISBN: 978-3-319-52015-5.


## Talks

- May 2025     **The Parallel-Semantics Program Dependence Graph and Its Use in Parallel Optimization.**  
*Research Talk, Northwestern University.*
- May 2024     **Compiling Loop-Based Nested Parallelism for Irregular Workloads.**  
*Paper Presentation, ASPLOS'24.*
- Dec 2023     **Effectively Scheduling Nested Fork-join Parallelism with Irregular Workloads.**  
*Liberty Research Group, Princeton University.*
-  **Effectively Scheduling Parallel Programs over Parallel Architectures.**  
*Ph.D. Qualifying Exam, Northwestern University.*
- Jul 2023     **Democratizing Heartbeat Scheduling via Heartbeat Compiler.**  
*The Constellation Project Workshop, Northwestern University.*





## Work Experience

- Sep 2024 – Mar 2025     **HPC Compiler Intern**, NVIDIA Corporation.  
Implemented an HPC compiler that reduces engineer effort for writing accelerator-specific, less portable parallel program using JIT compilation techniques and MLIR framework.
- Jun 2020 – Sep 2021     **Software Development Engineer**, Amazon.com.  
Collaborated with front-end and research teams, implemented and launched a product recommendation widget worldwide on the Amazon website.
- Jun 2019 – Sep 2019     **Software Development Engineer Intern**, Amazon.com.  
Designed and implemented an automated data pipeline to generate a new feature in Amazon's search process to decrease the search defects rate.

## Teaching Experience





- Sep 2019 – Dec 2019     **Teaching Assistant**, Northwestern University.  
*Introduction to Database Systems and Data Warehouse.*

## Skills

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|-----------------------|---|
| Programming Languages |  C, C++, Python, Java, Markdown, $\text{\LaTeX}$ . |
| Softwares             |  LLVM, MLIR, Git, VS Code, Jupyter Notebook.       |
| Sports                |  Soccer.   |
| Instruments           |  Violin.   |

## Miscellaneous





### Awards

- Apr 2024     **Travel Grant**, ASPLOS'24.
- May 2018     **Winner**, Computer Engineering Category at UIC EXPO 2018.
- Nov 2017     **National Scholarship**, Northeastern University.
- Nov 2016     **National Scholarship**, Northeastern University.

## Miscellaneous (continued)

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### Activities

- Sep 2024        **Associate Concertmaster.** Tualatin Valley Symphony.
- Jan 2024        **Associate Concertmaster.** Northwestern Philharmonia.
- Sep 2018        **Vice President of Membership.** Northwestern Toastmasters Club.
- Apr 2016        **Vice President.** Northeastern International Communication Club.